Calculus Review Derivatives Arizona State University

Abstracts of Papers Presented to the American Mathematical SocietyThe Geometry of Special RelativityThe Great TransitionMoney for NothingThe American Mathematical MonthlyGeometric Control TheoryCalculusAn Introduction to Numerical Methods and AnalysisIntermediate Microeconomics with Calculus: A Modern ApproachArizona Law ReviewMultivariable CalculusDifferential Forms and the Geometry of General RelativityComprehensive Dissertation IndexOptimal Control SystemsCalculusEngineering Mathematics with Examples and ApplicationsTechnical Calculus with Analytic GeometryDifferential EquationsIntroduction to Applied Linear AlgebraCollege Algebra and Calculus: An Applied ApproachOrbital Mechanics for Engineering StudentsApplied CalculusCalculusFinite Math and Applied CalculusSingle Variable CalculusClifford Algebra to Geometric CalculusActive CalculusPrecalculusCalculus with Analytic GeometryGuide to Geometric Algebra in PracticeAdvanced CalculusWonder-Full EducationCalculus and Its ApplicationsCalculusCalculus and Its ApplicationsCalculus for The Life SciencesInvariant Algebras and Geometric ReasoningCalculusCalculusCalculus Deconstructed

Abstracts of Papers Presented to the American Mathematical Society

A groundbreaking introduction to vectors, matrices, and least squares for engineering applications, offering a wealth of practical examples.

The Geometry of Special Relativity

A modern version of the calculus of variations, encompassing geometric mechanics, differential geometry, and optimal control.

The Great Transition

For many children much of the time their experience in classrooms can be rather dull, and yet the world the school is supposed to initiate children into is full of wonder. This book offers a rich understanding of the nature and roles of wonder in general and provides multiple suggestions for to how to revive wonder in adults (teachers and curriculum makers) and how to keep it alive in children. Its aim is to show that adequate education needs to take seriously the task of evoking wonder about the content of the curriculum and to show how this can routinely be done in everyday classrooms. The authors do not wax flowery; they present strong arguments based on either research or precisely described experience, and demonstrate how this argument can be seen to work itself out in daily practice. The emphasis is not on ways of evoking wonder that might require virtuoso teaching, but rather on how wonder can be evoked about the everyday features of the math or science or social studies curriculum in regular classrooms.

Money for Nothing

The American Mathematical Monthly

Geometric Control Theory

Active Calculus is different from most existing texts in that: the text is free to read online in .html or via download by users in .pdf format; in the electronic format, graphics are in full color and there are live .html links to java applets; the text is open source, so interested instructor can gain access to the original source files via GitHub; the style of the text requires students to be active learners there are very few worked examples in the text, with there instead being 3-4 activities per section that engage students in connecting ideas, solving problems, and developing understanding of key calculus ideas; each section begins with motivating questions, a brief introduction, and a preview activity; each section concludes (in .html) with live WeBWorK exercises for immediate feedback, followed by a few challenging problems.

Calculus

Precalculus is adaptable and designed to fit the needs of a variety of precalculus courses. It is a comprehensive text that covers more ground than a typical one- or two-semester college-level precalculus course. The content is organized by clearly-defined learning objectives, and includes worked examples that demonstrate problem-solving approaches in an accessible way. Coverage and Scope Precalculus contains twelve chapters, roughly divided into three groups. Chapters 1-4 discuss various types of functions, providing a foundation for the remainder of the course. Chapter 1: Functions Chapter 2: Linear Functions Chapter 3: Polynomial and Rational Functions Chapter 4: Exponential and Logarithmic Functions Chapters 5-8 focus on Trigonometry. In Precalculus, we approach trigonometry by first introducing angles and the unit circle, as opposed to the right triangle approach more commonly used in College Algebra and Trigonometry courses. Chapter 5: Trigonometric Functions Chapter 6: Periodic Functions Chapter 7: Trigonometric Identities and Equations Chapter 8: Further Applications of Trigonometry Chapters 9-12 present some advanced Precalculus topics that build on topics introduced in chapters 1-8. Most Precalculus syllabi include some of the topics in these chapters, but few include all. Instructors can select material as needed from this group of chapters, since they are not cumulative. Chapter 9: Systems of Equations and Inequalities Chapter 10: Analytic Geometry Chapter 11: Sequences, Probability and Counting Theory Chapter 12: Introduction to Calculus

An Introduction to Numerical Methods and Analysis

An authorised reissue of the long out of print classic textbook, Advanced Calculus by the late Dr Lynn Loomis and Dr Shlomo Sternberg both of Harvard University has been a revered but hard to find textbook for the advanced calculus course for decades. This book is based on an honors course in advanced calculus that the authors gave in the 1960's. The foundational material, presented in the unstarred sections of Chapters 1 through 11, was normally covered, but different applications

of this basic material were stressed from year to year, and the book therefore contains more material than was covered in any one year. It can accordingly be used (with omissions) as a text for a year's course in advanced calculus, or as a text for a three-semester introduction to analysis. The prerequisites are a good grounding in the calculus of one variable from a mathematically rigorous point of view, together with some acquaintance with linear algebra. The reader should be familiar with limit and continuity type arguments and have a certain amount of mathematical sophistication. As possible introductory texts, we mention Differential and Integral Calculus by R Courant, Calculus by T Apostol, Calculus by M Spivak, and Pure Mathematics by G Hardy. The reader should also have some experience with partial derivatives. In overall plan the book divides roughly into a first half which develops the calculus (principally the differential calculus) in the setting of normed vector spaces, and a second half which deals with the calculus of differentiable manifolds.

Intermediate Microeconomics with Calculus: A Modern Approach

"Published by OpenStax College, Calculus is designed for the typical two- or three-semester general calculus course, incorporating innovative features to enhance student learning. The book guides students through the core concepts of calculus and helps them understand how those concepts apply to their lives and the world around them. Due to the comprehensive nature of the material, we are offering the book in three volumes for flexibility and efficiency. Volume 1 covers functions, limits, derivatives, and integration."--BC Campus website.

Arizona Law Review

Multivariable Calculus

The theory of optimal control systems has grown and flourished since the 1960's. Many texts, written on varying levels of sophistication, have been published on the subject. Yet even those purportedly designed for beginners in the field are often riddled with complex theorems, and many treatments fail to include topics that are essential to a thorough grounding in the various aspects of and approaches to optimal control. Optimal Control Systems provides a comprehensive but accessible treatment of the subject with just the right degree of mathematical rigor to be complete but practical. It provides a solid bridge between "traditional" optimization using the calculus of variations and what is called "modern" optimal control. It also treats both continuous-time and discrete-time optimal control systems, giving students a firm grasp on both methods. Among this book's most outstanding features is a summary table that accompanies each topic or problem and includes a statement of the problem with a step-by-step solution. Students will also gain valuable experience in using industry-standard MATLAB and SIMULINK software, including the Control System and Symbolic Math Toolboxes. Diverse applications across fields from power engineering to medicine make a foundation in optimal control systems an essential part of an engineer's background. This clear, streamlined presentation is ideal for a graduate level course on control systems

and as a quick reference for working engineers.

Differential Forms and the Geometry of General Relativity

Reflecting Cengage Learning's commitment to offering flexible teaching solutions and value for students and instructors, these hybrid versions feature the instructional presentation found in the printed text while delivering end-of-section and/or end-of chapter exercises online in Enhanced WebAssign. The result—a briefer printed text that engages students online! James Stewart's CALCULUS texts are widely renowned for their mathematical precision and accuracy, clarity of exposition, and outstanding examples and problem sets. Millions of students worldwide have explored calculus through Stewart's trademark style, while instructors have turned to his approach time and time again. In the Eighth Edition of MULTIVARIABLE CALCULUS, Stewart continues to set the standard for the course while adding carefully revised content. The patient explanations, superb exercises, focus on problem solving, and carefully graded problem sets that have made Stewart's texts best-sellers continue to provide a strong foundation for the Eighth Edition. From the least prepared student to the most mathematically gifted, Stewart's writing and presentation serve to enhance understanding and build confidence. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Comprehensive Dissertation Index

A thorough and mathematically rigorous exposition of single-variable calculus for readers with some previous experience of calculus techniques. This book can be used as a textbook for an undergraduate course on calculus or as a reference for self-study.

Optimal Control Systems

Calculus

The demand for more reliable geometric computing in robotics, computer vision and graphics has revitalized many venerable algebraic subjects in mathematics OCo among them, GrassmannOCoCayley algebra and Geometric Algebra. Nowadays, they are used as powerful languages for projective, Euclidean and other classical geometries. This book contains the author and his collaborators' most recent, original development of GrassmannOCoCayley algebra and Geometric Algebra and their applications in automated reasoning of classical geometries. It includes two of the three advanced invariant algebras OCo Cayley bracket algebra, conformal geometric algebra, and null bracket algebra OCo for highly efficient geometric computing. They form the theory of advanced invariants, and capture the intrinsic beauty of geometric languages and geometric computing. Apart from their applications in discrete and computational geometry, the new languages are currently being used in computer vision, graphics and robotics by many researchers worldwide. Sample Chapter(s). Chapter 1: Introduction (252 KB). Contents: Projective Space, Bracket Algebra and GrassmannOCoCayley Algebra;

Projective Incidence Geometry with Cayley Bracket Algebra; Projective Conic Geometry with Bracket Algebra and Quadratic Grassmann-Cayley Algebra; Inner-product Bracket Algebra and Clifford Algebra; Geometric Algebra; Euclidean Geometry and Conformal GrassmannOCoCayley Algebra; Conformal Clifford Algebra and Classical Geometries. Readership: Graduate students in discrete and computational geometry, and computer mathematics; mathematicians and computer scientists.

Engineering Mathematics with Examples and Applications

The Geometry of Special Relativity provides an introduction to special relativity that encourages readers to see beyond the formulas to the deeper geometric structure. The text treats the geometry of hyperbolas as the key to understanding special relativity. This approach replaces the ubiquitous γ symbol of most standard treatments with the appropriate hyperbolic trigonometric functions. In most cases, this not only simplifies the appearance of the formulas, but also emphasizes their geometric content in such a way as to make them almost obvious. Furthermore, many important relations, including the famous relativistic addition formula for velocities, follow directly from the appropriate trigonometric addition formulas. The book first describes the basic physics of special relativity to set the stage for the geometric treatment that follows. It then reviews properties of ordinary two-dimensional Euclidean space, expressed in terms of the usual circular trigonometric functions, before presenting a similar treatment of two-dimensional Minkowski space, expressed in terms of hyperbolic trigonometric functions. After covering special relativity again from the geometric point of view, the text discusses standard paradoxes, applications to relativistic mechanics, the relativistic unification of electricity and magnetism, and further steps leading to Einstein's general theory of relativity. The book also briefly describes the further steps leading to Einstein's general theory of relativity and then explores applications of hyperbola geometry to non-Euclidean geometry and calculus, including a geometric construction of the derivatives of trigonometric functions and the exponential function.

Technical Calculus with Analytic Geometry

This highly practical Guide to Geometric Algebra in Practice reviews algebraic techniques for geometrical problems in computer science and engineering, and the relationships between them. The topics covered range from powerful new theoretical developments, to successful applications, and the development of new software and hardware tools. Topics and features: provides hands-on review exercises throughout the book, together with helpful chapter summaries; presents a concise introductory tutorial to conformal geometric algebra (CGA) in the appendices; examines the application of CGA for the description of rigid body motion, interpolation and tracking, and image processing; reviews the employment of GA in theorem proving and combinatorics; discusses the geometric algebra of lines, lower-dimensional algebras, and other alternatives to 5-dimensional CGA; proposes applications of coordinate-free methods of GA for differential geometry.

Differential Equations

The sweeping story of how the greatest minds of the Scientific Revolution applied their new ideas to people, money, and markets—and along the way, invented modern finance. "An astounding episode from the early days of financial markets that to this day continues to intrigue and perplex historians . . . narrative history at its best, lively and fresh with new insights."—Liaquat Ahamed, Pulitzer Prize–winning author of Lords of Finance Money for Nothing chronicles the moment when the needs of war, discoveries of natural philosophy, and ambitions of investors collided. It's about how the Scientific Revolution intertwined with finance to set England—and the world—off in an entirely new direction. At the dawn of the eighteenth century, England was running out of money due to a prolonged war with France. Parliament tried raising additional funds by selling debt to its citizens, taking in money now with the promise of interest later. It was the first permanent national debt, but still they needed more. They turned to the stock market—a relatively new invention itself—where Isaac Newton's new mathematics of change over time, which he applied to the motions of the planets and the natural world, were fast being applied to the world of money. What kind of future returns could a person expect on an investment today? The Scientific Revolution could help. In the hub of London's stock market—Exchange Alley—the South Sea Company hatched a scheme to turn pieces of the national debt into shares of company stock, and over the spring of 1720 the plan worked brilliantly. Stock prices doubled, doubled again, and then doubled once more, getting everyone in London from tradespeople to the Prince of Wales involved in money mania that consumed the people, press, and pocketbooks of the empire. Unlike science, though, with its tightly controlled experiments, the financial revolution was subject to trial and error on a grand scale, with dramatic, sometimes devastating, consequences for people's lives. With England at war and in need of funds and "stock-jobbers" looking for any opportunity to get in on the action, this new world of finance had the potential to save the nation—but only if it didn't bankrupt it first.

Introduction to Applied Linear Algebra

College Algebra and Calculus: An Applied Approach

Waner and Costenoble's FINITE MATHEMATICS AND APPLIED CALCULUS, Seventh Edition, helps your students see the relevance of mathematics in their lives. A large number of the applications are based on real, referenced data from business, economics, and the life and social sciences. Spreadsheet and TI Graphing Calculator instruction appears throughout the text, and an acclaimed author website provides time-saving teaching and learning resources. The end-of-chapter Technology Notes and Technology Guides are optional, allowing you to include in your course precisely the amount of technology instruction you choose. Praised for its accuracy and readability, FINITE MATHEMATICS AND APPLIED CALCULUS is perfect for all types of teaching and learning styles and support. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Orbital Mechanics for Engineering Students

This extremely readable, highly regarded, and widely adopted text present innovative ways for applying calculus to real-world situations in the business, economics, life science, and social science disciplines. The text's straightforward, engaging approach fosters the growth of both mathematical maturity and an appreciation for the usefulness of mathematics. The authors' tried and true formula — pairing substantial amounts of graphical analysis and informal geometric proofs with an abundance of hands-on exercizes — has proven to be tremendously successful. Functions, derivatives, applications of the derivative, techniques of differentiations, exponential and natural logarithm functions, definite integral, variables, trigonometric functions, integration, differential equations, Taylor polynomials and probability. For individuals interested in an introduction to calculus applications.

Applied Calculus

Major account of the fourteenth-century crisis which saw a series of famines, revolts and epidemics transform the medieval world.

Calculus

"Krantz is a very prolific writer. He creates excellent examples and problem sets." —Albert Boggess, Professor and Director of the School of Mathematics and Statistical Sciences, Arizona State University, Tempe, USA Designed for a one- or two-semester undergraduate course, Differential Equations: Theory, Technique and Practice, Second Edition educates a new generation of mathematical scientists and engineers on differential equations. This edition continues to emphasize examples and mathematical modeling as well as promote analytical thinking to help students in future studies. New to the Second Edition Improved exercise sets and examples Reorganized material on numerical techniques Enriched presentation of predator-prey problems Updated material on nonlinear differential equations and dynamical systems A new appendix that reviews linear algebra In each chapter, lively historical notes and mathematical nuggets enhance students' reading experience by offering perspectives on the lives of significant contributors to the discipline. "Anatomy of an Application" sections highlight rich applications from engineering, physics, and applied science. Problems for review and discovery also give students some open-ended material for exploration and further learning.

Finite Math and Applied Calculus

Single Variable Calculus

In this much anticipated first edition, the authors present the basic canons of first-year calculus, but motivated through real biological problems. The two main goals of the text are to provide students with a thorough grounding in calculus concepts and applications, analytical techniques, and numerical methods and to have students understand how, when, and why calculus can be used to model biological phenomena.Ê Both students and instructors will find the book to be a gateway to the exciting interface of mathematics and biology.

Clifford Algebra to Geometric Calculus

Active Calculus

Matrix algebra has been called "the arithmetic of higher mathematics" [Be]. We think the basis for a better arithmetic has long been available, but its versatility has hardly been appreciated, and it has not yet been integrated into the mainstream of mathematics. We refer to the system commonly called 'Clifford Algebra', though we prefer the name 'Geometric Algebm' suggested by Clifford himself. Many distinct algebraic systems have been adapted or developed to express geometric relations and describe geometric structures. Especially notable are those algebras which have been used for this purpose in physics, in particular, the system of complex numbers, the quatemions, matrix algebra, vector, tensor and spinor algebras and the algebra of differential forms. Each of these geometric algebras has some significant advantage over the others in certain applications, so no one of them provides an adequate algebraic structure for all purposes of geometry and physics. At the same time, the algebras overlap considerably, so they provide several different mathematical representations for individual geometrical or physical ideas.

Precalculus

This book introduces and develops the differential and integral calculus of functions of one variable.

Calculus with Analytic Geometry

COLLEGE ALGEBRA AND CALCULUS: AN APPLIED APPROACH, Second Edition provides your students a comprehensive resource for their college algebra and applied calculus courses. The mathematical concepts and applications are consistently presented in the same tone and pedagogy to promote confidence and a smooth transition from one course to the next. The consolidation of content for two courses in a single text saves you time in your course--and saves your students the cost of an extra textbook. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Guide to Geometric Algebra in Practice

Orbital Mechanics for Engineering Students, Second Edition, provides an introduction to the basic concepts of space mechanics. These include vector kinematics in three dimensions; Newton's laws of motion and gravitation; relative motion; the vector-based solution of the classical two-body problem; derivation of Kepler's equations; orbits in three dimensions; preliminary orbit determination; and orbital maneuvers. The book also covers relative motion and the two-impulse rendezvous problem; interplanetary mission design using patched conics; rigid-body dynamics used to characterize the attitude of a space vehicle; satellite attitude dynamics; and the characteristics and design of multi-stage launch

vehicles. Each chapter begins with an outline of key concepts and concludes with problems that are based on the material covered. This text is written for undergraduates who are studying orbital mechanics for the first time and have completed courses in physics, dynamics, and mathematics, including differential equations and applied linear algebra. Graduate students, researchers, and experienced practitioners will also find useful review materials in the book. NEW: Reorganized and improved discusions of coordinate systems, new discussion on perturbations and quarternions NEW: Increased coverage of attitude dynamics, including new Matlab algorithms and examples in chapter 10 New examples and homework problems

Advanced Calculus

Praise for the First Edition ". . . outstandingly appealing with regard to its style, contents, considerations of requirements of practice, choice of examples, and exercises." —Zentrablatt Math ". . . carefully structured with many detailed worked examples . . ." —The Mathematical Gazette ". . . an up-to-date and user-friendly account . . ." —Mathematika An Introduction to Numerical Methods and Analysis addresses the mathematics underlying approximation and scientific computing and successfully explains where approximation methods come from, why they sometimes work (or don't work), and when to use one of the many techniques that are available. Written in a style that emphasizes readability and usefulness for the numerical methods novice, the book begins with basic, elementary material and gradually builds up to more advanced topics. A selection of concepts required for the study of computational mathematics is introduced, and simple approximations using Taylor's Theorem are also treated in some depth. The text includes exercises that run the gamut from simple hand computations, to challenging derivations and minor proofs, to programming exercises. A greater emphasis on applied exercises as well as the cause and effect associated with numerical mathematics is featured throughout the book. An Introduction to Numerical Methods and Analysis is the ideal text for students in advanced undergraduate mathematics and engineering courses who are interested in gaining an understanding of numerical methods and numerical analysis.

Wonder-Full Education

Written for today's technology student, TECHNICAL CALCULUS WITH ANALYTIC GEOMETRY prepares you for your future courses! With an emphasis on applications, this mathematics text helps you learn calculus skills that are particular to technology. Clear presentation of concepts, detailed examples, marginal annotations, and step-by-step procedures enhance your understanding of difficult concepts. Notations that are frequently encountered in technology are used throughout to help you prepare for further courses in your career. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Calculus and Its Applications

Full of relevant, diverse, and current real-world applications students can relate to,

Stefan Waner and Steven Costenoble's APPLIED CALCULUS, 7th Edition helps your students see the relevance of mathematics to their interests. A large number of the applications are based on real, referenced data from business, economics, the life sciences, and the social sciences. Thorough, clearly delineated spreadsheet and TI Graphing Calculator instruction appears throughout the text, and an acclaimed author website at www.wanermath.com provides interactive tutorials, powerful utilities, conceptualization tools, review, and practice. The end-of-chapter Technology Notes and Technology Guides are optional, allowing you to include any amount of technology instruction in your courses. Acclaimed for accuracy and readability, APPLIED CALCULUS appeals to, and is appropriate for, all types of teaching and learning styles and support. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Calculus

From Google's chief economist, Varian's best-selling intermediate microeconomics texts are revered as some of the best in the field. And now students can work problems online with Smartwork5, Norton's online homework system, packaged at no additional charge with the Media Update Editions. In addition to online homework, the texts now include four-color graphs and new interactive animations.

Calculus and Its Applications

This is an expanded version of Calculus and its Applications, Tenth Edition, by the same authors. The additional coverage includes trigonometric functions, differential equations, sequences and series, and probability distributions. Chapters on Systems and Matrices and Discrete Probability are available as a custom option or online in MyMathLab. Anticipating and meeting student needs Calculus and Its Applications remains a best-selling text due to its accessible presentation, which anticipates and addresses student needs. The writing style is ideal for today's students, providing intuitive explanations with carefully crafted artwork to help them visualize calculus concepts. Additionally, the text's numerous and up-to-date applications from business, economics, life sciences, and social sciences help to motivate students. Algebra diagnostic and review material is available for those who need to strengthen basic skills. Every aspect of this version is designed to motivate and help students to more readily understand and apply the mathematics. Note: You are purchasing a standalone product; MyMathLab does not come packaged with this content. MyMathLab is not a self-paced technology and should only be purchased when required by an instructor. If you would like to purchase both the physical text and MyMathLab, search for: 0134123492 / 9780134123493 Calculus and Its Applications Expanded Version Media Update Plus MyMathLab -- Access Card Package Package consists of 0134122585 / 9780134122588 Calculus and Its Applications Expanded Version Media Update 0321431308 / 9780321431301 MyMathLab -- Glue-in Access Card 0321654064 / 9780321654069 MyMathLab Inside Star Sticker Students, if interested in purchasing this title with MyMathLab, ask your instructor for the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information.

Calculus for The Life Sciences

Engineering Mathematics with Examples and Applications provides a compact and concise primer in the field, starting with the foundations, and then gradually developing to the advanced level of mathematics that is necessary for all engineering disciplines. Therefore, this book's aim is to help undergraduates rapidly develop the fundamental knowledge of engineering mathematics. The book can also be used by graduates to review and refresh their mathematical skills. Step-by-step worked examples will help the students gain more insights and build sufficient confidence in engineering mathematics and problem-solving. The main approach and style of this book is informal, theorem-free, and practical. By using an informal and theorem-free approach, all fundamental mathematics topics required for engineering are covered, and readers can gain such basic knowledge of all important topics without worrying about rigorous (often boring) proofs. Certain rigorous proof and derivatives are presented in an informal way by direct, straightforward mathematical operations and calculations, giving students the same level of fundamental knowledge without any tedious steps. In addition, this practical approach provides over 100 worked examples so that students can see how each step of mathematical problems can be derived without any gap or jump in steps. Thus, readers can build their understanding and mathematical confidence gradually and in a step-by-step manner. Covers fundamental engineering topics that are presented at the right level, without worry of rigorous proofs Includes step-by-step worked examples (of which 100+ feature in the work) Provides an emphasis on numerical methods, such as root-finding algorithms, numerical integration, and numerical methods of differential equations Balances theory and practice to aid in practical problem-solving in various contexts and applications

Invariant Algebras and Geometric Reasoning

Calculus

Note: You are purchasing a standalone product; MyMathLab does not come packaged with this content. If you would like to purchase both the physical text and MyMathLab, search for ISBN-10: 0321963636 /ISBN-13: #9780321431301. That package includes ISBN-10: 0321431308 ISBN-13: 9780321431301, ISBN-10: 0321654064 ISBN-13: 9780321654069 and ISBN-10: 0321954351/ISBN-13: 9780321954350. MyMathLab is not a self-paced technology and should only be purchased when required by an instructor. This much anticipated second edition of the most successful new calculus text published in the last two decades retains the best of the first edition while introducing important advances and refinements. Authors Briggs, Cochran, and Gillett build from a foundation of meticulously crafted exercise sets, then draw students into the narrative through writing that reflects the voice of the instructor, examples that are stepped out and thoughtfully annotated, and figures that are designed to teach rather than simply supplement the narrative. The authors appeal to students' geometric intuition to introduce fundamental concepts, laying a foundation for the development that follows.

Calculus

Calculus Deconstructed

Differential Forms and the Geometry of General Relativity provides readers with a coherent path to understanding relativity. Requiring little more than calculus and some linear algebra, it helps readers learn just enough differential geometry to grasp the basics of general relativity. The book contains two intertwined but distinct halves. Designed for advanced undergraduate or beginning graduate students in mathematics or physics, most of the text requires little more than familiarity with calculus and linear algebra. The first half presents an introduction to general relativity that describes some of the surprising implications of relativity without introducing more formalism than necessary. This nonstandard approach uses differential forms rather than tensor calculus and minimizes the use of "index gymnastics" as much as possible. The second half of the book takes a more detailed look at the mathematics of differential forms. It covers the theory behind the mathematics used in the first half by emphasizing a conceptual understanding instead of formal proofs. The book provides a language to describe curvature, the key geometric idea in general relativity.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION